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Glass Fibre Sizing: A Review of Size Formulation Patents

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Glass Fibre Reinforcements form the foundation of a composites industry with a global annual production of greater than 10 million tons of high performance, light-weight materials. Possibly the most critical component involved in the manufacture of glass fibres and their composites is the fibre surface coating (or size). Yet because of the intense level of industrial secrecy around size formulations there are very few people in the vast chain of composite materials suppliers, processors and end users who have more than a superficial understanding of these coatings. Many questions are raised about glass fibre size by this large and growing composite community. But the most frequently asked is “what is actually in the size on this glass fibre product?”

There is only one source of openly available information on commercial size formulations and that is the patents of the glass fibre manufacturers. This book contains analysis of more than 500 examples of patented size formulations many of which are probably still in use in commercial glass fibre production. The information is tabulated to allow readers to easily identify the similarities and differences between the sizes and their glass fibre products developed for different composite end-use applications, different composite processing techniques, and compatibility with different polymers. Also included is a chapter discussing how patents and their associated information can be used to gain insight into which size formulations may actually be in use in glass fibre production.

List of Chapter Titles

- Introduction
- Sizes and Sizing in Glass Fibre Production
- Size Formulations in Patents
- Size Patents of Owens Corning
- Size Patents of Vetrotex
- Size Patents of PPG Fiber Glass
- Size Patents from Other Companies
- Glass Fibre Product Identification
- Conclusions from this Review

244 pages, 13 Figures, 131 Tables, 5 Appendices

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